

Exhibit 6

INTRODUCTION

EXPOSURE TO VIOLENCE, PARENTAL MONITORING, AND TELEVISION VIEWING AS CONTRIBUTORS TO CHILDREN'S PSYCHOLOGICAL TRAUMA

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This study examined the relative contributions of exposure to violence, parental monitoring, and television viewing habits to children's self-reported symptoms of psychological trauma. Children in grades 3–8 in 11 public schools completed an anonymous self-report questionnaire administered during usual school hours. The final sample was comprised of 2245 children who represented 80% of the students in attendance at the participating schools. Students ranged in age from 7 to 15 years; 49% were female, 57% were white, 33% black, and 5% were Hispanic. A model using hierarchical multiple regression explained approximately 39% of the variance in students' overall trauma symptom scores. A combination of demographic variables, daily hours of television viewing, and recent and past exposure to violence were significant contributors to this explained variance. Bivariate analyses of high violence-exposed students (top quartile) revealed approximately 39% of both girls and boys with clinically elevated scores in at least one trauma symptom category. The findings support the need to identify and to provide services for children exposed to violence. © 2004 Wiley Periodicals, Inc.

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This study examines the relative contributions of exposure to violence, parental monitoring, and television viewing habits to children's self-reported symptoms of psychological trauma. We hypothesize that:

1. children's exposure to violence will be positively associated with symptoms of psychological trauma,
2. parental monitoring will be negatively associated with symptoms of psychological trauma such that children who are more highly monitored report fewer symptoms of psychological trauma, and
3. the number of hours of daily television viewing and a preference for watching violent television shows will be associated positively with children's symptoms of psychological trauma.

The incidence of violence in the lives of older adolescents has been of concern for some time, and recent evidence suggests violence extends into the lives of younger children as well. Homicide rates provide the starkest testimony to the risk of victimization for children and youth. In 1998, the murder rate for youth under the age of 18 was seven per day, making homicide the second leading cause of death for adolescents in the United States and one of the leading causes of child mortality (Office of Juvenile Justice and Delinquency Prevention, 2001a). Of all the major causes of child deaths in the US, homicide is the only one to have increased in frequency over the past 30 years (Fox & Zawitz, 2001). It is particularly disturbing that about half the cases of violent victimization go unreported to authorities, according to 1996 data (Office of Juvenile Justice and Delinquency Prevention, 2000). These findings reflect only fatalities. According to recent statistics, those aged 12 to 24 years were exposed to more violent victimization than any other age group (Bureau of Justice Statistics, 2000), and 1 in 18 victims of violent crime is under 12 years of age (Office of Juvenile Justice and Delinquency Prevention, 2001b). Thus, when taking into account fatal and nonfatal victimization, as well as the witnessing of violent acts, the number of children and adolescents exposed to violence is substantial.

EXPOSURE TO COMMUNITY VIOLENCE

Many children live in environments in which they frequently are exposed to violence in neighborhoods and schools (Lorion & Saltzman, 1993; Richters & Martinez, 1993). Numerous studies of both children and adolescents have documented exposure to a variety of violent acts in these settings ranging from threats of physical harm to knifings and shootings (Boney-McCoy & Finkelhor, 1995; Fehon, Grilo, & Lipschitz, 2001a, 2001b; Fitzpatrick & Boldizar, 1993; Jones, Ajrotutu, & Johnson, 1996; Schwab-Stone et al., 1995; Weist, Acosta, & Youngstrom, 2001). While exposure to more extreme forms of violence such as beatings and weapons-related violence is most prevalent in highly populated, low-income neighborhoods, children and adolescents in rural and smaller city settings also experience these forms of violence (Singer, Anglin, Song, & Lunghofer, 1995; Singer et al., 1999).

Tragically, the home is the setting where many children first experience and/or witness violence. Data on family violence in the United States indicate there were about 3 million reports of alleged maltreatment to child protective services in 1999, with 28% of these reports being substantiated (Osofsky, 2001). About 40% of all murder victims under the age of 18 are killed by a family member (Office of Juvenile

Justice and Delinquency Prevention, 2001c). Beyond these figures, reported levels of sibling assault are as high as 800 per 1000, yet such assaults tend to go unreported, except in the most severe cases (Finkelhor & Dziuba-Leatherman, 1994; Office of Juvenile Justice and Delinquency Prevention, 2000).

In a large community-based survey of exposure to violence among adolescents, nearly 40% of boys and 50% of girls reported seeing someone else being slapped, hit, or punched at home, and nearly 20% of adolescents reported witnessing a beating at home in the past year. Rates of adolescent self-reported victimization also were high, with one in ten girls reporting they had been beaten at home and nearly half of all girls reported witnessing someone else being slapped, hit, or punched at home in the past year (Flannery, Singer, Williams, & Castro, 1998).

Violence in and around schools has gained widespread attention in the media. A nationally representative survey of over 6500 sixth through twelfth grade students indicated that nearly three-fourths of the students were aware of incidents of physical attack, robbery, or bullying, and more than one-half had witnessed such events since the beginning of the school year (Nolin, Davies, & Chandler, 1995). Being a victim of crime at school appears to be a less frequent occurrence than in other settings (Small & Tetrick, 2001); however, the incidence of violence experienced by students is nevertheless disconcerting. In 1998, youths aged 12 through 18 years were victimized by 1.2 million nonfatal violent crimes at school. The rate of violent crime (rape, theft, sexual assault, and aggravated assault) experienced by this age group has been reasonably stable from 1992 to 1998 (Small & Tetrick, 2001). Similarly, school-associated student homicides have remained relatively constant between the years of 1994 and 1999 (Anderson et al., 2001; Kachur et al., 1996; Small & Tetrick, 2001).

CONSEQUENCES OF EXPOSURE TO VIOLENCE

Studies of children and adolescents suggest that chronic exposure to violence is associated with a number of psychological symptoms, including depression (Richters & Martinez, 1993), suicidal ideation (Flannery, Singer, & Wester, 2001), dissociation (Atlas & Hiott, 1994), and posttraumatic stress (Fitzpatrick & Boldizar, 1993; Horowitz, Weine, & Jekel, 1995). Witnessing violence can be equally traumatic (Cooley-Quille, Boyd, Frantz, & Walsh, 2001; Foy & Goguen, 1998; Rosenthal & Wilson, 2001), although fewer studies have addressed this issue (see Buka, Stichick, Birdthistle, & Earls, 2001; Drotar et al., 2003). For example, in a sample of older adolescents in an urban setting, Rosenthal and Wilson (2001) found that witnessing violence and repeated exposure to community violence were both independently associated with anger, anxiety, depression, and dissociation. There also is evidence that the relationship of the perpetrator to the victim has implications for the impact of abuse on mental health. In one study, children and adolescents victimized by people familiar to them reported high levels of distress and depression; yet, such levels were not observed when exposure to violence involved strangers (Richters & Martinez, 1993).

The deleterious effects of violence exposure on mental health have been well documented; however, it is equally important to consider the behavioral implications of this exposure. The causal link between exposure to violence and aggression has been investigated across various stages of childhood and adolescence, including children as young as preschool age (Dodge, Bates, & Pettit, 1990). Children victimized by adults in early childhood and followed prospectively into their middle childhood years

have been found to have high levels of aggressive behavior and to be the victims of peer violence (Schwartz, Dodge, Petit, & Bates, 1997).

Children's and adolescents' exposure to community violence has been associated with aggressive and violent behaviors (Attar, Guerra, & Tolan, 1994; Bell & Jenkins, 1993; Schwab-Stone et al., 1995; Stuber, Nader, & Pynoos, 1997). Similarly, studies focusing on samples of juvenile delinquents have retrospectively linked violent behavior to violence exposure (Smith & Thornberry, 1995; Spaccarelli, Bowden, Coatsworth, & Kim, 1997). Longitudinal research has documented the intergenerational relationship between violence exposure and violent behaviors (Farrington, 1991; Huesmann, Eron, Lefkowitz, & Walder, 1984).

PARENTAL MONITORING

Among family process variables, parental monitoring has been identified in the literature as one of the proximal determinants of early development and maintenance of antisocial and/or delinquent behavior in children and adolescents. It has been demonstrated that children who report low levels of monitoring by parents have a greater opportunity to engage in violent behavior and experience higher rates of exposure to violence and victimization (Brendgen, Vitaro, Tremblay, & Lavoie, 2001; Farrell & White, 1998; Griffin, Botvin, Scheier, Diaz, & Miller, 2000).

Early studies have established an association between parental monitoring and delinquency (McCord, 1979; Patterson & Dishion, 1985; Wilson, 1980). More recent studies have confirmed this finding, that parents of antisocial and delinquent youth typically have little knowledge of the whereabouts of their children and that they do not know who they are with or what they are doing (Flannery, Williams, & Vazsonyi, 1999; Patterson & Stouthamer-Loeber, 1984; Young & Zimmerman, 1998). The monitoring construct has been found to be unique in its ability to discriminate between chronic and modest offenders (Flannery, Vazsonyi, Torquati & Fridrich, 1994; Patterson & Stouthamer-Loeber, 1984; Ramsey, Walker, Shinn, O'Neill, & Stieber, 1989). Lack of parental supervision has been related to other negative outcome variables such as physical aggression (Haapasalo & Tremblay, 1994), low grade-point average, high-risk sexual behavior (Army, Duncan, Duncan, & Hops, 1999), drug use and drug trafficking (Li, Stanton, & Feigelman, 2000), and poor conduct (Crouter, MacDermid, McHale, & Jenkins, 1990). Parental monitoring generally has been found to be related to boys' behavior, but not to that of girls (Crouter et al., 1990; Flannery et al., 1999), although recent studies have found differential effects for boys and girls depending on the outcome behavior being examined (Griffin et al., 2000).

A recent study examining the potential moderating effects of parental monitoring to the relationship between children's violence exposure and their psychological well being found that while increased parental monitoring had a positive effect on the psychological well being of children who were less exposed to violence, the impact of parental monitoring decreased as violence exposure increased (Ceballo, Ramirez, Hearn, & Maltese, 2003).

TELEVISION

Television consumes a large portion of American children's daily lives and therefore must be considered as a potential source of violence exposure. Children in the United States view about 2.5 hours of television per day by the time they enter elementary

school, increase their viewing to almost four hours per day by early adolescence, and average somewhere between two and three hours during their teenage years (Liebert & Sprafkin, 1988).

Children who are heavy viewers of television tend to see the world as a "scary place," especially when they identify with the victims of mean or frightening incidents on television (Rubinstein, 1983). An examination of the long-term effects of television violence on children's beliefs about the world found that children who viewed violent adult-oriented programs scored the highest on a test that measured whether children perceived the world as a dangerous and/or unfriendly place (Singer, Singer, & Rapaczynski, 1984). As a result of the development of this outlook on the world, children who repeatedly view violence on television are likely to increase their self-protective and mistrustful behaviors (National Television Violence Study, 1995), placing them at greater risk for psychological and social problems. High duration of television viewing has been associated with emotional instability (Persegani et al., 2002; Singer, Slovak, Frierson, & York, 1998), social problems, attention problems, delinquency and violent behavior (Huesmann & Malamuth, 1986; Huesmann, Moise-Titus, Podolski, & Eron, 2003; Johnson, Cohen, Smailes, Kasen, & Brook, 2002; Ozmert, Toyran, & Yurdakok, 2002).

CONCLUSION

The above literature strongly suggests the importance of understanding the sequelae of children's exposure to violence. The present study contributes to this need by examining the differential and cumulative effects of children's exposure to violence at home, at school, and in the neighborhood. In addition, it adds to the literature by investigating the emotional correlates of violence exposure and examines the relationship between violence exposure and parental monitoring and TV viewing.

METHODS

A 45-minute anonymous self-report questionnaire was administered to third- to eighth-grade students during regular school hours in the 1995–1996 school year. The University Review Committee for Human Studies of Case Western Reserve University approved the study protocol.

All students in grades three through eight who were present on the day the survey was administered were eligible for inclusion. The eleven public schools in three school districts in Ohio included three central city schools in Cleveland, four schools in a small northeast Ohio city, and four schools from a rural county in northern Ohio. Students in the Cleveland schools resided in predominantly lower or lower-middle socioeconomic neighborhoods. The small city schools were located in a town whose residents were primarily characterized as blue-collar workers. Students from the rural schools resided in a blue-collar school district composed of several small towns and villages and was determined a rural school district by the Ohio Department of Education.

Variables and Instrumentation

Demographic Variables. Demographic information included age, grade level, gender, race/ ethnicity, and parental composition at home. Race was categorized into four

groups: African American, Hispanic, white, and other. To measure parental composition in home, respondents were asked with whom they lived: mother only, father only, mother and father, or neither mother nor father. This question did not distinguish between biological parents and other parental figures.

Recent Exposure to Violence. Recent exposure to violence was measured by directly asking children to report violence they had experienced or personally witnessed over the past year. Students were asked not to include events they may have seen or heard about from other people or from other sources such as television. The 26 items contained in this part of the questionnaire were derived from the 22-item *Recent Exposure to Violence Scale* (Singer et al., 1995) that examined five types of violence: threats, slapping/hitting/punching, beatings, knife attacks, and gun violence. Two questions on being a witness or victim of sexual abuse were added. Children were asked if they had been "touched on a private place on your body where you didn't want to be touched," and if they had witnessed this act happening to someone else. An additional two questions were added that asked children whether a gun had been pointed at them or whether they had witnessed a gun being pointed at someone else. For three types of violence (threats, slap/hit/punch, beatings), questions were categorized by the setting in which the violence occurred: home, school, and/or neighborhood. The remaining items were not specific to the setting where the violence occurred. A four-point Likert scale ranging from "never" (0) to "almost every day" (3) was employed to assess the frequency of each type of violence. Reported reliability based on Cronbach's α for five factors derived from principal component analysis on the *Recent Exposure to Violence* items in the previous study (Singer et al., 1995) were as follows:

1. witness of neighborhood violence, $\alpha = .87$;
2. victim/witness of home violence, $\alpha = .75$;
3. witness of school violence, $\alpha = .80$;
4. victim/witness of a shooting/knife attack, $\alpha = .70$; and
5. victim of school or neighborhood violence, $\alpha = .68$.

The following Cronbach's α s were achieved for the current study's sample:

1. witness of neighborhood violence, .80;
2. victim/witness of home violence, .77;
3. witness of school violence, .76;
4. victim/witness of a shooting/knife attack, .75;
5. victim of school or neighborhood violence, .72; and
6. sexual abuse, .52.

All Cronbach's α s with the exception of "Sexual Abuse" are greater than .70, indicating an acceptable level of reliability. The scale for "Sexual Abuse" is comprised of only two items, a probable reason for its lower reliability.

Past Exposure to Violence. Past exposure to violence was measured through a modified 12-item version of the 10-item *Past Violence Exposure Scale* used in a previous study (Singer et al., 1995). Children were asked to report specific acts of violence they had experienced or witnessed during their lifetimes, not including the past year. The same

types of violence described in the *Recent Exposure to Violence* scale were included with the exception of gun pointing (an important behavior that we had failed to measure in the 10-item version). The specific settings (home, school, neighborhood) were excluded for all questions due to concern about memory recall for events that occurred more than one year in the past. The same four-point Likert scale response choices were used, ranging from "never" (a score of 0) to "very often" (a score of 3). Previously reported reliability (Singer et al., 1995) based on Cronbach's α for three factors extracted from the *Past Exposure to Violence Scale* were as follows:

1. witness of past violence, $\alpha = .80$;
2. victim of past violence, $\alpha = .66$; and
3. victim/witness of a shooting/knife attack, $\alpha = .71$.

For the current sample, based on results from exploratory and confirmatory factor analyses, two items ("Self been attacked or stabbed with a knife" and "Self been shot at or shot with a real gun") needed to be removed due to unclear factor loadings. Out of the remaining items, three dimensions (scales) were found to measure past violence exposure. These dimensions and their corresponding Cronbach's α s are as follows:

1. witness of past violence, .79;
2. victim of past violence, .68; and
3. victim/witness of sexual abuse, .59.

All α s indicate a moderate level of reliability and can be accepted by common standard, although the reliability of "Sexual Abuse" is lower than desired, again, probably due to the small number of scale items (i.e., two).

Trauma Symptoms. Trauma symptoms were measured through the *Trauma Symptom Checklist for Children* (TSC-C) (Briere, 1996). This instrument assesses the sequelae of trauma/abuse in childhood and was developed to be understood by children as young as eight years old. The TSC-C includes 54 items that comprise six subscales: anxiety, depression, posttraumatic stress, dissociation, anger, and sexual concerns. Sexual concerns items were not included in the current study due to the concerns of school administration. This scale has been demonstrated to be a reliable instrument in a number of studies (Elliot & Briere, 1991; Evans, Briere, Boggiano, & Barrett, 1994; Lanktree, Briere, & de Jonge, 1993; Singer et al., 1995). The reported reliability based on Cronbach's α for the five scales included in the present study is as follows: anxiety, .82; depression, .86; posttraumatic stress, .87; dissociation, .83; anger, .89; and for the total scale score, .95 (Briere, 1996).

Parental Monitoring. Parental monitoring is the degree to which a parent is aware of his/her child's daily activities and friends. Parental monitoring was measured using an adaptation of a six-item parental monitoring scale that previously had achieved a Cronbach's α of .77 (Flannery et al., 1994). Parental monitoring items included such questions as "How important is it for your parents or guardian to know who your friends are?" and "Do your parents or guardian make you come home at a certain time at night?" An additional question regarding punishment by parents was added to the original six items for the present study ("Do your parents or guardian punish you if you break the rules?"). Likert scale response choices were "never/not important" (0),

"sometimes/a little important" (1), "usually/pretty important" (2), and "always/very important" (3). For this study's sample, Cronbach's $\alpha = .76$.

Television Viewing. Children were asked about how much television they watched per day, with answer options of "I do not watch television", "less than an hour", "1-2 hours", "3-4 hours", "5-6 hours", and "more than 6 hours". A second question asked what types of television shows children preferred watching. Show topics included: "shows that are funny", "shows that teach me things", "shows that have lots of action and fighting", "shows about kids and their families", "shows about imaginary places", "shows that talk about news and current events", and "shows that feature music videos".

RESULTS

A total of 2245 students participated in this study. This figure represents 80% of the students present in the schools at the time the survey was administered. Slightly more boys (50.9%) than girls (49.1%) are represented in the sample. The average age of participants was 11 years old ($SD = 1.8$; range 7-15 years). About 60 percent of the sample reported living with both mother and father (two-parent home). The racial composition of the sample was as follows: 57% White, 33% African American, 5% Hispanic, and 4% Other.

Substantial percentages of students reported being exposed to violence within the past year. Approximately 40% of respondents reported being slapped, hit, or punched at home, and over one-third of respondents reported being so victimized at school. About 18% of central city boys, 16% of small city boys, and 11% of rural boys reported being beaten up in their neighborhoods. Over two-thirds of all students reported witnessing someone being beaten up at school within the past year. More complete information on levels of violence exposure in this sample has been reported previously (Singer et al., 1999).

As part of the parental monitoring scale, students were asked three questions about specific forms of supervision. A large majority of both boys and girls reported their parents usually or always know where they are when they are not in school, usually or always make them come home at a certain time at night, and usually or always expect them to call home if they are going to be late. However, approximately one-fifth of the girls and one-fourth of the boys responded they never or only sometimes are monitored in these ways.

When asked if it was important for their parents to know where they (the students) were all the time, approximately nine of ten boys and girls reported it was pretty important or very important. Similarly, approximately seven in ten boys and girls responded it was important for their parents to know who their friends are.

Approximately one-fourth of both boys and girls were not very compliant in terms of following their parents' rules, with 28% of the boys and 23% of the girls reporting they never or only sometimes go where they tell their parents they are going. Approximately six in ten boys and girls reported they usually or always get punished if they break the rules; conversely, about 40% of students stated that they sometimes or never get punished if they break the rules.

About two-thirds of the students reported watching three or more hours of television per day. Slightly over one in five students reported watching more than six hours of television per day. There was little noticeable difference between gender or age groups on the amount of television viewed; however, there were clear gender

differences in students' favorite type of television program. The largest category selected by boys was shows that have lots of action and fighting, with 44% of the boys selecting this as their favorite type of television program. The second largest category chosen by boys was shows that are funny, with approximately one-third selecting this type of show. The largest category selected by girls was shows that are funny, with almost two in five reporting a preference for this type of show. The second largest category, chosen by almost one-third of girls, was shows that feature music videos. More complete information on the television viewing habits of this sample has been reported elsewhere (Singer et al., 1998).

Correlations among our variables of interest are displayed in Table 1. Total psychological trauma was found to be related both significantly and positively to recent and past exposure to violence. While significant, the relationship between trauma symptoms and frequency of watching television was modest ($r = .15$, $p < 0.01$). A modest correlation also was found for the relationship between exposure to violence and frequency of watching television and preference for watching violence on television. Frequency of television viewing was not related to levels of parental monitoring. Trauma symptoms were not related to child reports of parental monitoring.

Through use of hierarchical multiple regression, we assessed the degree to which total trauma symptom scores could be explained by five demographic variables, parental monitoring score, two television viewing habits, six recent violence-exposure variables, and three past violence-exposure variables. Each of the sets of variables was entered hierarchically into a multiple regression analysis, resulting in five models that account for students' total trauma symptoms. Each model adds a new set of variables that build from the previous model; therefore, the newly added set of variables' unique contribution to explaining trauma symptoms is indicated while controlling for the previously entered variables.

Table 2 reveals that when all variables were taken into account, Model 5 explained approximately 39% of the variance in trauma symptom scores. The largest increases in explained variance occurred in Model 4, when recent violence-exposure variables were entered.

The relative importance of variables in predicting trauma symptoms was determined by comparing standardized regression coefficients or beta weights (B). Among

Table 1. Correlations Among Outcome Variables

	2	3	4	5	6	7	8	9	10	11
1. Anger	.57	.53	.65	.58	.78	-.18	.53	.51	.19	.16
2. Posttraumatic Stress		.83	.75	.74	.90	.04	.45	.45	.10	ns
3. Anxiety			.71	.78	.88	.08	.37	.39	.10	-.06
4. Dissociation				.72	.89	-.05	.42	.41	.14	.06
5. Depression					.87	ns	.38	.38	.08	-.04
6. Total Trauma						-.02	.50	.50	.15	.03
7. Parent Monitoring							-.14	-.11	ns	-.17
8. Recent Violence								.75	.12	.14
9. Past Violence									.11	.12
10. Frequency TV										.14
11. Prefer Violent TV										

Note. All Pearson correlations are significant at $p < .01$. Correlations between Prefer Violent TV and other outcomes were calculated using Kendall τ - β .

Table 2. Hierarchical Regression Analysis on Total Trauma Symptom Scale

Explanatory	Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Demographics						
Gender (Male = 1)		-.12	-.13*	-.16*	-.18*	-.18*
Grade		-.03*	-.03*	-.03*	-.03*	-.03*
Residence						
Central City		-.10*	-.11*	-.12*	-.15*	-.15*
Rural		-.09*	-.09*	-.09*	-.04	-.04
Race (White = 1)		-.05	-.05	-.03	.01	.01
Two-Parent Family		-.09*	-.10*	-.10*	-.05*	-.05*
Parental Monitoring Score			-.04*	-.03	-.02	-.01
Television Watching Habits						
Daily Watch Hours				.06*	.04*	.04*
Favoring Action				.04	.00	.00
Recent Violence-Exposure Subscales						
Witnessed in Neighborhood					.00	-.01
Victimized/Witnessed Home					.27*	.17*
Witnessed at School					.09*	.07*
Shooting/Knife Attack					.13*	.04
Victimized at School or in Neighborhood					.29*	.18*
Sexual Abuse					.15*	.08*
Past Violence-Exposure Subscales						
Witnessed						.10*
Victimized						.20*
Sexual Abuse						.07*
Constant		1.22	1.33	1.12	.67	.66
Adjusted R^2		.036	.040	.066	.346	.386
Incremental R^2			.004	.026	.280	.040

*Significant at 0.05 level, two-tailed test.

demographic variables, male gender and central city residence ($B = -.18$ and $B = -.15$, respectively) were the most important predictors of students' total trauma symptoms. Thus, males and central city residents had significantly lower trauma symptom scores than females and individuals living in rural and small city settings. Parental monitoring was not a significant contributor to the explained variance of trauma symptoms in Model 5. The number of hours of daily television viewing was a significant but modest contributor to the explained variance in trauma symptom scores; however, favoring violent programs did not contribute to this variance in any model. Both recent and past violence-exposure variables were strong contributors to the prediction of trauma symptoms. More specifically, being a witness or victim of recent home violence ($B = .17$), being a recent victim of school or neighborhood violence ($B = .18$), or being a past victim of violence ($B = .20$) were important contributors to the explained variance in total trauma symptom scores.

Table 3 displays the bivariate relationship between high and low levels of violence exposure and clinical levels of psychological trauma. High and low levels of violence exposure represent the top and bottom quartiles of scores on the recent violence-exposure scale. We controlled for residence (central city, small city, rural) by selecting the upper and lower quartiles by residential area. Scores at the clinical level indicate

Table 3. Percent of Students in TSC-C Clinical Range: Low vs. High Recent Violence Exposure (N = 2244)

<i>TSC-C Subscale</i>	<i>Girls Low Exposure</i>	<i>Girls High Exposure</i>	<i>Boys Low Exposure</i>	<i>Boys High Exposure</i>
Anxiety	2.1	20.5*	1.8	16.5*
Depression	1.7	20.6*	2.2	17.4*
Anger	0.3	15.7*	1.8	19.3*
Posttraumatic Stress	1.0	15.8*	1.5	15.9*
Dissociation	3.1	19.2*	2.2	18.6*
One or More Subscales in Clinical Range	4.9	38.8*	7.0	38.6*

* $p < .01$.

a need for formal psychological assessment/intervention. Chi-square analyses by gender revealed significant differences between high and low violence-exposed students across all trauma symptom categories. Interestingly, almost identical percentages of high violence-exposed girls and boys (38.8% and 38.6%, respectively) had clinical scores for one or more symptom category.

DISCUSSION

The results support the association between violence exposure and symptoms of psychological trauma and further explain the linkages among selected demographic variables, parental monitoring, television viewing, violence exposure, and psychological trauma.

About one in four children reported either never or only sometimes being where they had told their parents they were going; thus, for a significant subset of children, parents had been misinformed of their children's whereabouts. It is likely that these children were in places that would have been displeasing to their parents, possibly exposing them to a number of high-risk situations/behaviors including drug use, sexual acts, and violent activities. Consistent with this finding, about two in five students reported they either never or only sometimes got punished by their parents for breaking parents' rules. The combination of disregard for accurately reporting one's whereabouts with a lack of sanctions when such rule-breaking behavior is discovered serves to encourage these behaviors and may result in an expansion of high-risk behaviors across the developmental lifespan.

The bivariate relationship between violence exposure and clinical levels of psychological trauma revealed significant differences between high and low violence-exposed students for both genders on all 5 symptoms subscales. Furthermore, slightly over one-third of both girls and boys revealed one or more subscales in the clinical range. Clinically significant levels of trauma symptoms suggest the need for a more in-depth clinical evaluation. For example, a child who has a depression score within the clinical range should be evaluated for suicidality or self-injury (Briere, 1996). While the percentage of clinical symptoms among high violence-exposed children is certainly noteworthy, so too is the percentage of children without such clinical findings (61%). Due to the cross-sectional design of this study, it is not possible to determine

if more children will enter the clinical range in the future or the endurance of the clinical findings in children who were significantly traumatized. It is possible that many of the high violence-exposed children who did not exhibit clinical levels of distress will display a "sleeper effect" and develop such levels in the future, regardless of additional violence exposure. These children also could be sensitized to future violence exposure and quickly develop clinical-level trauma symptoms with relatively little future exposure. Alternatively, it is possible that children who have not developed these levels of symptoms are more resilient than those in distress and will remain somewhat resistant to the effects of violence exposure. Illumination of these issues awaits future longitudinal studies.

Hierarchical regression analysis revealed several demographic variables that were associated significantly with lower trauma symptom scores: living in a two-parent household, residing in a large city, being male, and being in a higher grade (i.e., older). While it is not surprising that living in a two-parent household is associated with lower levels of psychological distress, a similar association with living in an urban setting is not as apparent. Previous studies have demonstrated high levels of violence exposure among children living in urban settings (Fitzpatrick & Boldizar, 1993; Lorion & Saltzman, 1993; Schwab-Stone et al., 1995; Singer et al., 1995). Levels of violence exposure have been found to be highest in high-density, economically deprived neighborhoods (Salzinger, Feldman, Stockhammer, & Hood, 2002). Therefore, it is possible that children living in such settings psychologically adjust as a means of coping with the stress of potential violence. One study of African-American urban youth reported a relationship between high violence exposure and low resting pulse rate (Cooley-Quille & Lorion, 1999). The authors discussed the findings in light of possible physiological adaptation and emotional desensitization.

Parental monitoring achieved significance in Model 2 when only parental monitoring was examined (controlling for demographics). In our final hierarchical model, parental monitoring did not contribute to the explained variance of trauma symptoms, and therefore did not play a significant role in reducing trauma symptoms. However, we previously have reported the importance of parental monitoring in reducing violent behaviors (Singer et al., 1999). Hours of daily television viewing were associated with higher trauma symptom scores. As stated earlier, this potentially modifiable behavior has long been associated with both violent behavior and levels of anxiety/fear.

Several recent violence-exposure subscales were associated with increased psychological distress, including being a witness or victim of home violence, witnessing violence at school, being a victim of violence in school or in the neighborhood, and being sexually abused. The combined contributions of recent violence-exposure variables were responsible for the largest incremental increase in explained variance (.28). Thus, exposure to violence within the last year is a powerful contributor to children's psychological distress. In conjunction with the previously noted percentage of high violence-exposed children in clinical distress, this finding strongly underscores the necessity of early detection of recent violence exposure.

Past sexual abuse, violence victimization, and witnessing of violence were associated reliably with trauma symptom scores; however, the addition to the explained variance provided by these measures was modest (.04). This modest addition, compared to the more substantial contribution of recent violence exposure, may be explained in part by the concluding position of the past violence-exposure variables in the hierarchical regression.

There are several limitations of this study. While the study was comprised of racially diverse sample of students in grades 3–8 from urban, suburban, and rural schools, the sample was not regionally or nationally representative. The cross-sectional nature of our study prohibits causal implications of the findings. Corroboration of children's self-reports through official records and/or information given by teachers or parents was not possible due to the confidentiality of subjects' self-reports.

Although the data in this model did not support the association between parental monitoring and symptoms of psychological trauma, the results suggest the benefits of moderating children's hours of television viewing and of the early identification of children exposed to violence. In particular, since over one-third of the children in the top quartile of violence exposure were experiencing clinical levels of psychological distress, adequate screening and the availability of mental-health services for violence-exposed children are of primary importance.

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